

Vast Arsenal Humming With Activity

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TNT-producing elements and one DNT-producing element in each. The reason for this grouping is that some of the acids used in one process can be returned and reused in the other.

TO A LAYMAN with little knowledge of chemistry, the TNT line and its complementary "acid area" presents an almost befuddling series of paradoxes. Kankakee unit uses large quantities of sulphur — 2,500 tons or so each month. But no sulphur at all goes into the finished product. Liquids are involved throughout in the manufacture of TNT. But the stuff itself comes out in yellow flakes, looking something like rice. DNT — used as an artillery propellant, or the charge that fires the shell — comes out as a creamy powder. It looks, and even smells, like cake-mix. But what a cake it would make!

The newsmen climbed to a wooden catwalk some 50 or 60 feet above the ground, to look over the acid area and get a general view of the widespread Kankakee unit. From small stacks on one building, mustard yellow fumes were rising in the sunlit air. From another, clouds of white steam arose and rolled northeastward in the gentle breeze. Pipes and valves were visible almost everywhere one looked.

ALL U. S. RUBBER employees who have anything to do with the chemical lines wear a standard outfit: felt hat, blue wool shirt and wool pants. The wool absorbs

acids and prevents possible burns. Clothing of any other material would simply fall apart if it were spattered with — say — nitric acid. Every building on the TNT line has one or more "escape chutes." These are simply metal troughs down which a man can slide if he wants to make a hurried exit. At the end of each trough is a handle controlling a special mechanism. The worker can yank this handle and dump his whole "batch" of chemical mix into a huge vat of water. These precautions are necessary in case a particular batch of nitrated toluene should "go wild."

There has been only one explosion on the TNT line, and that occurred during the last war. No one was injured, but one building was virtually wiped off the landscape.

On the Elwood side, Constan and Col. Currans emphasized, three main factors are considered: Safety, quality and efficiency, in that order. Without safety, they explained, there can be no efficiency, and without rigidly-controlled quality, the product is useless. Buildings on each line are separated by 400-foot intervals, and each process of loading and preparing a shell for shipment takes place in a separate concrete bay. Installations themselves are 2,400 feet apart which is what ordnancemen call "inhabited building distance."

BERYLLIUM non-sparking tools are used in all loading areas; employees are forbidden to carry matches, and special safety shoes must be worn. One group of newsmen loped down the 4,800-foot-long 105 mm. shell line behind Supervisor George Doyle, watching the shell casings move along through the "first pour," the "second pour," the fuze assembly and various other manufacturing and inspection procedures until they were finally placed in round black containers and carefully packed, two to a box, in heavy wooden crates.

On the shell line, TNT is melted to a certain temperature, automatically poured, then the shells are allowed to cool. Cooling involves shrinkage which would leave "bubbles" or cavities inside the shell load. Hence the top of the load is drilled out, and a second pour is made to assure a full, tightly-packed load. Rigid inspections maintain quality all along the line.

THE SAFETY record at the Arsenal is said by officials to be remarkably good. On the Kankakee side, the accident rate is about one-third of that in the chemical industry as a whole. On the Elwood side, the rate is below the general industrial average and well below such industries as lumbering and coal mining.

Production figures are, of course, not available at the Arsenal, for security reasons. But it's apparent that the installation, one of the 5 largest of the 22 under the jurisdiction of the Ordnance corps, is putting out "a lot of stuff," slightly more than 50 per cent of the Elwood unit employees are women. About 12 per cent on the Kankakee side are from the staff group, but the K. N. K. unit has begun hiring women for production jobs for the first time.

Luncheon was served to the newsmen at the Arsenal yesterday by the Hagerty Catering Service, which operates the cafeteria.

Vast Joliet Arsenal Humming With Activity; 7,000 Now Working There

BY DAN ALBRECHT
(Managing Editor of
The Herald-News)
(Pictures on Page 17)

They're cooking on the front burners these days down at the Joliet Arsenal, 11 miles south of Joliet.

And what they're cooking will bring no joy to the enemies of freedom. The big arsenal, sprawled over 56 square miles of Illinois prairie, is producing TNT, DNT and lead azide — all powerful explosives — and is assembling and loading shells for 57 mm., 75 mm. and 105 mm. cannon.

NEWSPAPERMEN of the Chicago area visited the arsenal yesterday, on invitation of Col. R. B. Currans, commanding officer, and looked over operations both at the Kankakee unit, operated on contract by the United States Rubber company, and at the Elwood

unit, operated by the government.

Current employment at the Arsenal, according to Col. Currans, is 7,000 persons, with 5,000 working on the Elwood side (east of highway 66-A) and 2,000 employed on the Kankakee side.

From their first briefing by Col. Currans and Howard R. Gaetz, factory manager of the Kankakee unit, to their closing question-and-answer session with the same officials and George Constan, chief of operations at the Elwood plant, the visiting newspapermen manifested special interest in the safety precautions employed and in the methods used to boost production to its present high level from virtually a standing start in 1930.

THE KANKAKEE unit, essentially a chemical works devoted to the manufacture of explosive materials, is now operating about 80

per cent of its maximum facilities on a continuous shift basis, seven days a week. The Elwood unit, which is made up of assembly lines for the production of shells and fuzes, is operating two six day shifts. Actual output cannot be accurately compared with World War II figures, when a total of 14,000 were employed, because of improvements in some manufacturing processes, Col. Currans explained.

The "cooking" process by which TNT and DNT are produced involves a number of complicated chemical actions, performed chiefly on what is known as the "TNT line" of the Kankakee unit. The line, in physical appearance, is a string of buildings linked together by a fantastic network of pipes and tubes. The buildings are arranged in six groups, with two

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